QUERCUS DELIQUESCENS, A NEW SPECIES FROM CHIHUAHUA, MEXICO

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Recent heavy concentration of collecting efforts in the Chihuahuan Desert region of Mexico and adjacent Texas and New Mexico have yielded much new information on the flora and its distribution. Among the novelties is a striking species of Quercus here described as new.

QUERCUS DELIQUESCENS C.H. Mull., sp. nov. Frutex ad 1.5 m. altus, intricato-ramosus; folia sempervirentia, 12—25 (35) mm. longa, 10—15 (25) mm. lata, ovata, apiculato-dentata vel lobata, crispata, coriacea, supra puberulenta, subtus persistente cinereo-stellato-tomentosa vel lanata; venis utrinque 5—7, supra impressis; petioli 2—4 mm. longi, canescenti; fructus annuus, brevi-pedunculatus; cupula hemispherica, 10—15 mm. lata; squamae, praeter apicem, incrassatae, cinereo-tomentulosae, apicibus strictis adpressis fuscis; glans ignota.

TYPE. MEXICO: Chihuahua: south slope and top of Sierra del Roque, NNE of Julimes, approached from Mina Las Playas via Rancho El Saucito (28° 39'—28° 40' N; 105° 18'—105° 19' W), 1500—2000 m., June 19, 1973, M.C. Johnston, T.L. Wendt, & F. Chiang C. 11388 (holotype, TEX).

Rhizomatous shrubs to 1.5 m. tall, intricately and diffusively branched throughout; twigs 1—2 mm. in diameter, densely white- or pale gray-tomentulose, graying and persisting tomentulose the second year; buds narrowly ovoid, scarcely 2 mm. long, commonly hidden in the pubescence of the crowded petioles; stipules subulate, pubescent, quickly deciduous. Leaves evergreen, coriaceous, 12—25 (35) mm. long, 10—15 (25) mm. broad, ovate, 2—3 apiculate teeth or small lobes on each side, crispate, apiculately acute at apex, rounded or cordate at base; upper surface green, minutely stellate-pubescent, the scattered

hairs finally deciduous; lower surface densely and persistently pale gray-tomentulose or lanate, darkening slightly the second year; veins 5—7 on each side, the principal ones passing into the teeth, somewhat impressed on the upper surface, prominent even through the tomentulum beneath; petioles 2—4 mm. long, tomentulose or lanate as the lower leaf surfaces. Staminate catkins about 10 mm. long, the filiform white-lanate rachis densely flowered, the glabrous anthers barely exserted from the fimbriate calyces. Pistillate catkins 1- or 2-flowered on a canescent peduncle about 3 mm. long. Fruit annual, solitary or paired on a persistently pubescent peduncle 3—5 mm. long; cups hemispheric, 10—15 mm. broad, the scales moderately thickened and gray-tomentulose except for the thin, brown, closely appressed, glabrous apices; acorns unknown.

ADDITIONAL SPECIMENS EXAMINED. MEXICO: Chihuahua: canyon above Rancho El Recuerdo in Sierra de Carrasco, ca. 31 (air) miles NW of Julimes, 6200 ft., September 15, 1973, James Henrickson 12977 (TEX); Sierra Chorreras: W slopes of side canyon of Cañon Pedregosa that drains N side of 2150 m. SW peak of range; ca. 6 1/2 (air) miles ESE of Chorreras (28° 48' 30" N; 105° 09' 30" W), March 20, 1975, 1700 m., T. Wendt & E.J. Lott 705 (TEX); ca. 7 (air) miles ESE of Chorreras (28° 48' N; 105° 09' W), 1800 m., T. Wendt & E.J. Lott 712, 712A (TEX); 1900 m., T. Wendt & E.J. Lott 712B, 712C (TEX); 2000 m. T. Wendt & E.J. Lott 712D, 712E (TEX); Sierra Grande, ca. 3 km. E. of Rancho El Murcielago (29° 52' N; 104° 50' W), 1550—1750 m., June 12, 1973, M.C. Johnston, T.L. Wendt, & F. Chiang C. 11288B (TEX); Sierra de la Parra, across Rio Grande from Sierra Vieja (30° 00' 30"—30° 02' 30" N; 104° 52' 30"—104° 53' W), 1450—2158 m., June 13, 1973, M.C. Johnston, T.L. Wendt, & F. Chiang C. 11306A (TEX).

HABITAT. Limestone slopes and tops of desert mountains in chaparral or thorn-shrub vegetation. At the higher elevations it forms extensive and dense thickets.

Quercus deliquescens is named to reflect the excessively intricate branching which obscures the principal axes of this rhizomatous shrub. The several collections exhibit a marked morphological constancy over a wide environmental range. The species is related to Q. intricata Trel. of nearby Texas, Coahuila, and southward to Zacatecas and Durango. Both species are obligate inhabitants of limestone and function as major constituents of well-developed chaparral (sensu Californico). The two species are distinguished by several characters as follows:

A. Leaf blades ovate in outline, coarsely 2—3 toothed or lobed on each side, the margins almost always coarsely crisped but never ultimately revolute, the white or light gray tomentum fully covering the midribs and principal veins beneath, veins 5—7 on each side . . . . . Q. deliquescens.

B. Leaf blades oblong or rarely ovate in outline, usually entire or rarely 3—5 teeth or lobes on each side of a few leaves, the margins commonly moderately crisped or plane but always ultimately revolute, the midribs and principal veins glabrous and brown against the buff tomentum beneath, veins 8—9 on each side . . . . . Q. intricata.

The purely irrelevant deviations of Q. intricata in which toothing of the leaves suggests Q. deliquescens all occurred in southern Coahuila, far distant from any genetic contact with the latter species. While the two species are nowhere sympatric, the great similarity of their habitat requirements and their close relationship would make hybridization very likely if they were to occur on the same mountain. The distribution of Q. deliquescens is unique in the genus. It occupies a rectilinear range incorporating generally untimbered mountains paralleling the courses of the Rio Grande and Rio Conchos in Chihuahua (Fig. 1).

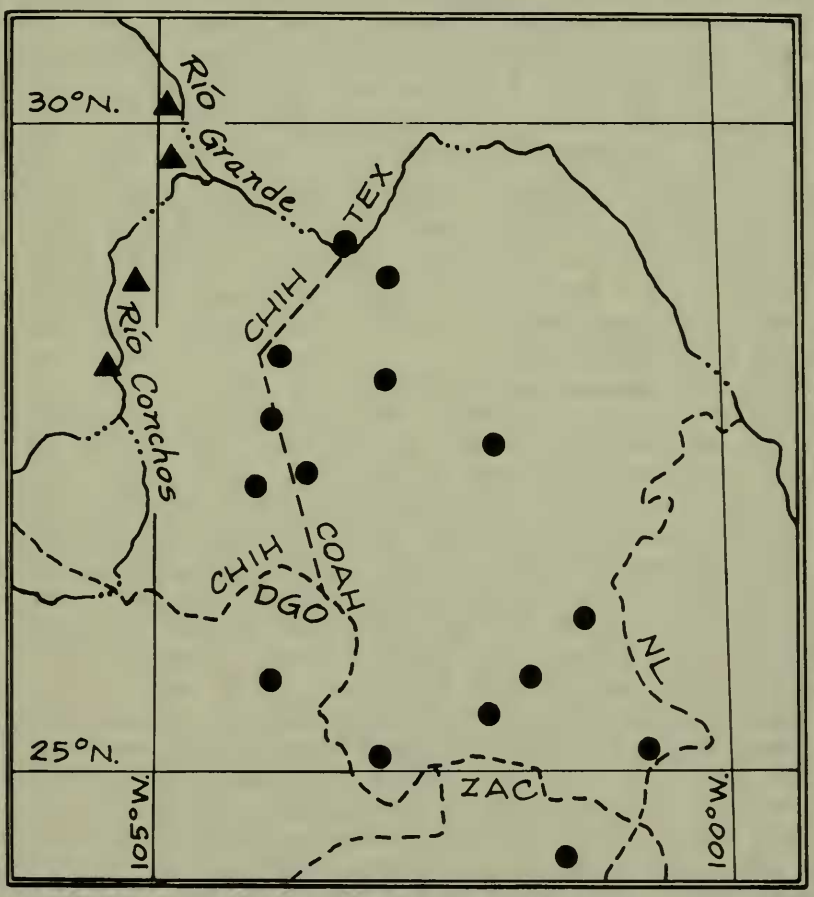

Fig. 1. Distribution of Quercus deliquescens (▲) and Q. intricata (●). (Map by M. Hasey.)